

## CLAIMS:

1. An X-ray examination apparatus which includes  
an X-ray source (11),  
an X-ray detector (13) including sensor elements for converting X-ray in electrical charges  
and a processing unit (2) for the correction of image data and  
5 a defect detection unit (3) for the detection of image defects that can be detected on the basis  
of image parameters that can be extracted from image data arising during clinical  
examinations and is suitable to adapt , in dependence on the detected image defects, the  
processing parameters (18-21) used in the processing unit (2), characterized in that  
for the detection of notably image defects caused by defective sensor elements the defect  
10 detection unit (3) includes  
a filter unit (37) for filtering the image data,  
and a unit (35) for averaging the filtered image data, and  
a comparison unit (36) for comparing the filtered and averaged image data with a threshold  
value in order to form a defect table for the sensor elements in dependence on the threshold  
15 value.
2. An X-ray examination apparatus as claimed in claim 1,  
characterized in that  
the defect detection unit (3) is arranged to adapt status parameters of the X-ray examination  
20 apparatus.
3. An X-ray examination apparatus as claimed in claim 1,  
characterized in that  
continuous detection takes place.
- 25 4. An X-ray examination apparatus as claimed in claim 1,  
characterized in that  
the filter unit (37) includes a ranking filter (31) for filtering the image data,  
an inverter (32) for inverting image data, and

a summing unit (33) for summing the filtered and inverted image data, there also being provided a unit (34) for forming the absolute values of the summed image data.

- 5 5. An X-ray examination apparatus as claimed in claim 1, characterized in that the defect detection unit (3) is arranged to apply a corrected defect table to the processing unit (2) in the case of detection of defective sensor elements.
- 10 6. An X-ray examination apparatus as claimed in claim 1, characterized in that the threshold value is predetermined or can be defined adaptively by forming histograms of the image data subsequent to the unit (34) for forming the absolute value.
- 15 7. An X-ray examination apparatus as claimed in claim 4, characterized in that the ranking filters (31) have variable kernels (Figs. 4 b, e).
- 20 8. A method of forming X-ray images with a X-ray examination apparatus as claimed in claim 1 to 7.
9. A method as claimed in claim 8, characterized in that the adaptation of the processing parameters is performed in stages, the adaptation being performed during operation in a first stage whereas adaptation takes place in a standby mode of the X-ray examination apparatus in a second stage and adaptation takes place by intervention by a user in a third stage.
- 25 10. A computer program for the correction of image data, notably image defects caused by defective sensor elements, whereas a filtering (37) of clinical image data being performed by means of ranking filters (31) and the filtered data being averaged (35) and a defect table being formed for the sensor elements in dependence on a threshold value (36).